

outer surface with one or more slits disposed thereon for cooling the bearing and the fixed surface.

9. (Twice Amended) A motor comprising:

a rotary shaft; and

a bearing for radially supporting the rotary shaft, wherein the bearing includes:

a cylindrical rotary member connected to the rotary shaft;

a cylindrical fixed surface surrounding the rotary member, wherein the fixed surface is spaced from the rotary member by a predetermined distance, and wherein the rotary member is made of a material having a coefficient of thermal expansion that is  $5 \times 10^{-6}/^{\circ}\text{C}$  or less, and which is smaller than the coefficient of thermal expansion of the material of the fixed surface; and

armature coils arranged about a peripheral surface of the fixed surface to rotate the rotary shaft.

12. (Twice Amended) The motor according to claim 9, further comprising a case for accommodating the bearing, the rotary member, and the fixed surface, wherein the case has an outer surface with one or more slits disposed thereon for cooling the bearing and the fixed surface.

15. (Twice Amended) A turbo-molecular pump comprising:

a housing;

a stator vane attached to the housing;

a rotor vane rotated relative to the stator vane; and

a motor for driving the rotor vane, wherein the motor includes:

a rotary shaft; and

a bearing for radially supporting the rotary shaft, wherein the bearing includes:

a cylindrical rotary member connected to the rotary shaft;

a cylindrical fixed surface surrounding the rotary member, wherein the fixed surface is spaced from the rotary member by a predetermined distance, and wherein the rotary member is made of a material having a coefficient of thermal expansion that is  $5 \times 10^{-6}/^{\circ}\text{C}$  or less, and which is smaller than the coefficient of thermal expansion of the material of the fixed surface; and

armature coils arranged about a peripheral surface of the fixed surface to rotate the rotary shaft.